

### **REMARKS**

Claims 1, 3-19 and 21 are in this application. Claim 1 has been amended to recite porcine mammals and to include the further step previously set forth in claim 2; support is found at page 3, lines 2-6, and in the examples. Claims 2 and 20 have been canceled over amended claim 1 as (now) redundant. Claim 3 has been amended for consistency with claim 1 as amended. Claim 21 has been amended for proper dependency. None of the amendments made herein constitutes the addition of new matter.

#### The Rejections under 35 U.S.C. 112, second paragraph

Claim 1 has been rejected under 35 U.S.C. 112, second paragraph, as allegedly indefinite because “and” is not properly place.

Applicants have amended claim 1 so that “and” is recited at the end of the next-to-last method step. It is believed that this amendment renders this aspect of the rejection moot.

The Patent Office has further alleged that the language of steps (b) and (c) are contradictory as to the temporal relationship of enucleation and activation.

Claim 1 has been amended so that it is clear that an activated oocyte is enucleated. This amendment is support by the as-filed application at page 3, lines 23-24. It is believed that this amendment renders this aspect of the rejection moot.

#### The Rejections under 35 U.S.C. 102

Claims 1-3, 6, 8, 14-15 and 18 have been rejected under 35 U.S.C. 102(b) as allegedly anticipated by Sims et al. (PNAS 91:6143-6147, 1994). Applicants respectfully traverse this rejection.

In the interest of advancing prosecution and without acquiescing to this rejection, Applicants have amended the claims so as to be limited to porcine mammals. The cited Sims reference relates to calves (bovines).

Accordingly, Applicants respectfully submit that the reference does not anticipate the invention as now claimed, and the rejection under 35 U.S.C. 102(b) must be withdrawn.

Claims 1 and 13 have been rejected under 35 U.S.C. 102(b) as allegedly anticipated by Wakayama et al. (PNAS 95:14984-14989, 1998). Applicants respectfully traverse this rejection.

In the interest of advancing prosecution and without acquiescing to this rejection, Applicants have amended the claims so as to be limited to porcine mammals. The cited reference relates to mice.

Accordingly, Applicants respectfully submit that the cited Wakayama reference does not anticipate the invention as now claimed, and the rejection under 35 U.S.C. 102(b) must be withdrawn.

Claims 1, 4, 15 and 17 have been rejected under 35 U.S.C. 102(b) as allegedly anticipated by Amano et al. (Reproduction 121:729-733, 2001). Applicants respectfully traverse this rejection.

In the interest of advancing prosecution and without acquiescing to this rejection, Applicants have amended the claims so as to be limited to porcine mammals. The cited Amano reference relates to mice.

Accordingly, Applicants respectfully submit that the reference does not anticipate the invention as now claimed, and the rejection under 35 U.S.C. 102(b) must be withdrawn.

#### The Rejections under 35 U.S.C. 103

The Examiner has noted that this application names joint inventors. Applicants confirm that both inventors were obligated to assign the invention to a common assignee, The Board of Trustees of the University of Illinois. An assignment has been recorded for this application. Detailed information will be provided on request.

Claims 1 and 5 have been rejected under 35 U.S.C. 103 as allegedly obvious over Wheeler (1994) in view of Sims (1994). Applicants respectfully traverse this rejection.

The cited Wheeler reference teaches the use of pig cells as nuclear donors, and it is said to further teach the production of transgenic pigs and this reference is further alleged to provide motivation.

The cited Wheeler reference teaches the production of chimeric embryos (mixture of two cell types with respect to genetic information carried) with genetic contributions of the two parents distinguished visually on the basis of coat color. Embryos were said to have been injected with cultured embryonic stem cells, but there does not appear to be any disclosure that oocytes were matured, enucleated and heterologous nuclei then introduced. The methods described produce an animal in which there are cells with different genomes, not an animal in which there is genomic homogeneity. There is no demonstration of nuclear transfer. Thus, Wheeler does not provide any reasonable probability of success in making transgenic animals using nuclear transfer technology.

As noted above, the cited Sims reference relates to bovine cells, and especially ICM cells. There is nothing in the cited Sims reference that would convey any reasonable probability of success in making the claimed invention, which as amended, relates to porcine mammals. In addition, claim 1 specifies the use of embryonic stem cells, which are believed to be distinct from ICM cells. See the as-filed application at pages 21-27 for a discussion of difficulties related to the production of transgenic offspring after nuclear transfer.

Because of the shortcomings in the cited references, these references provide, at most, an invitation to experiment. These references do not convey the requisite reasonable probability of success (see, e.g., In re O'Farrell, 7 USPQ2d 1673, CAFC 1988) for there to be a proper rejection for obviousness. At the time the invention was made, there was considerable difficulty associated with generating transgenic mammalian offspring following nuclear transfer.

Accordingly, the invention as claimed is not *prima facie* obvious over the cited references, and the rejection should be withdrawn.

### Conclusion

Applicants respectfully submit that the pending claims are in condition for allowance and early notification thereof is requested.

If, in the interest of expediting prosecution, the Examiner has questions or comments, he is invited to telephone the undersigned at the indicated telephone number.

This response is accompanied by a Petition for Extension of Time (one months) and a charge to Deposit Account 07-1969 in the amount of \$60 as required by 37

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C.F.R. 1.17 has been authorized. It is believed that the present submission does not necessitate an additional extension of time or the payment of any further fees under 37 C.F.R. 1.16-1.17. If this is incorrect, however, please consider this response to include the petition for the time necessary for a timely response and charge any deficiency or credit any overpayment in fees pursuant to the foregoing Rules to Deposit Account No. 07-1969.

Respectfully submitted,

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